

This listing of claims will replace all prior versions of the claims in this application:

Listing of Claims:

Claim 1. (Currently Amended) A method of preparing a polymeric brush substrate for use in solid-phase synthesis of macromolecules, the method comprising:

(a) providing a substrate for solid-phase synthesis of macromolecules to which one or more free radical initiators are covalently attached, wherein each free radical initiator has a radical generation site distal to the substrate; and

(b) contacting the covalently attached substrate with monomers under conditions that promote free radical polymerization from the radical generation sites of the initiators to form a polymeric brush.

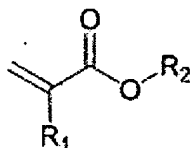
Claim 2. (Original) The method of claim 1, wherein step (b) comprises living free radical polymerization.

Claim 3. (Original) The method of claim 1, wherein the substrate comprises glass or silica.

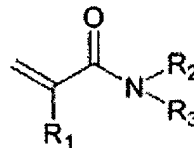
Claim 4. (Original) The method of claim 1, wherein the monomers comprise a vinyl group.

Claim 5. (Withdrawn)

Claim 6. (Original) The method of claim 1, wherein the monomers independently have the structure:



or



wherein R1 is hydrogen or lower alkyl; and

R2 and R3 are independently hydrogen, alkyl, alkoxy, hydroxyalkyl, polyalkylene oxide, or Y Z, wherein Y is linear or branched lower alkyl, aryl, alkylaryl, or polyalkylene oxide, and Z is hydrogen, hydroxyl, alkoxy, carboxy, amino, hydrazino, sulfydryl, or C(O)—R, where R is hydrogen, hydroxy, lower alkoxy or aryloxy.

Claim 7. (Original) The method of claim 1, wherein the polymer brush formed on the support comprises hydroxyl, amino, carboxyl, or sulfydryl groups or a combination thereof.

Claim 8. (Original) The method of claim 1, wherein the monomers comprise vinyl acetate.

Claims 9 – 21 (Withdrawn)